

Kansas

Race and Ancestry Reporting Revised Death Certificate 2005 - 2006, Kansas



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Division of Health
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Our Vision – Healthy Kansans Living in Safe and Sustainable Environments

As the state's environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans. Through education, direct services, and the assessment of data and trends, coupled with policy development and enforcement, KDHE will improve health and quality of life. We prevent illness, injuries and foster a safe and sustainable environment for the people of Kansas.

Abstract

This report evaluates the possible extent of under-reporting of race on Kansas death certificates, uses two alternate methods for categorizing race, and compares the effect of the resulting age-adjusted mortality rates on health disparity in Kansas.

Two years of Kansas resident ancestry and race data from the revised death certificate were tabulated after re-categorizing race.

Age-adjusted mortality rates for two of three race groups studied – Black and American Indian/Alaska Native (AIAN) – increased significantly using a method that recategorized race based on ancestry. The strongest effect was on mortality rates for American Indian/ Native Americans.

Introduction

The number of racial and ethnic minorities in Kansas has increased to represent 17 percent of the state's population.¹ This compares to about 12 percent of the state's population in 1990.

This increase coincides with growing interest in Kansas in studying the reasons why health disparities exist. One dilemma for researchers is accurate tabulation of race on vital statistics reports.

The Kansas Department of Health and Environment (KDHE), through its Center for Health Disparities, has as one of its missions to promote and improve the health status of racial/ethnic populations in Kansas by advocating for and coordinating access to primary and preventive health services that are effective, efficient and culturally competent.²

Race and Hispanic origin data on death certificates is subject to under-reporting for several reasons: family members may not be asked by the funeral home about the race and origin of the decedent or family members may not be aware of the full race and origin history of the decedent. Eleven percent of deaths linked to Indian Health Service patient registration system records were misclassified for race.³

Prior to 2005, the reporting of vital events – specifically births and deaths – in Kansas involved the reporting of a single race response. Responses were coded in accordance with established guidelines from the National Center for Health Statistics (NCHS). Thus, a person who wrote down two races on a birth certificate would have the first race information coded on the certificate. Persons of Hispanic origin, who entered that in the race category, were also recoded to white. Hispanic origin was also reported in a separate data element.

Kansas has implemented new federal guidelines on the reporting of race and Hispanic origin information. These guidelines are designed to reduce under-reporting of minorities and better characterize the health outcomes among population sub-groups. Kansas' implementation in 2005 of the U.S. Standard Birth Certificate enabled persons to report more than one race on vital events (Appendix 1). Additionally, Hispanic origin was expanded and is asked first on vital event certificates.

While NCHS prepared guidelines for recoding race information,⁴ the Kansas Department of Health and Environment opted to not recode race data. Instead KDHE developed a population group method for reporting race and Hispanic origin as single categories.⁵ This approach allowed for reporting results in general reports while maintaining the raw data for special analyses.

One limitation of the new collection method is its effect on tabulations when more than one race was selected. The multiple selections are not assigned to any of the single race categories named, but instead become part of a category called "two or more races." Thus a portion of the vital event counts are not available for tabulations by single race groups.

This report evaluates the effect on general mortality rates of reassigning persons of two or more races to individual component categories. It further looks at the impact on mortality rates by using the decedent's ancestry to redefine whether a person is a member of a minority group.

Methods

SAS software⁶ was used to extract age, race, ancestry and underlying cause of death fields from the 2005 and 2006 KDHE final Annual History Files containing Kansas resident deaths. Hispanic origin information was not used for this analysis. Because of the small number of deaths to Native Hawaiian and other Pacific Islander persons, this race group was not analyzed.

The responses to the ancestry question on the death certificate (up to four responses possible) were tabulated. A master list of every unique entry into the ancestry fields was compiled. Misspellings were not changed. Entries such as "American" or for a European country were ignored. The remaining responses were then grouped into race categories based on: similarity to a tribal name, countries on the Asian continent, counties on the African continent, or countries in the Pacific islands (Appendix 2). The four race groups: Black, Asian, American Indian/Alaska Native (AIAN), and Native Hawaiian and other Pacific Islander (NHOPI) were reviewed.

Three methods for categorizing race were used for the analysis. The first method is a traditional approach for stratifying by race.

- persons for whom a single race only was reported (Single Race Only);
- persons with a single race reported alone or in combination (Race Alone or in Combination); and
- persons with a single race reported alone or in combination or whose race category was reassigned to a specific minority race group based on information recorded in the ancestry fields (Ancestry-adjusted).

U.S. Census Bureau un-bridged population estimates⁷ were used as the population denominator for rate calculations. These files contain population estimates for single race only and for race alone or in combination. Single race only population estimates were used as the denominator when death counts were based on the single race only.

Race alone or in combination population estimates were used for the rate calculations based on death counts reported by race alone or in combination and ancestry-adjusted.

Age-adjusted death rates were computed by the direct method, that is, by applying agespecific death rates to the U.S. standard population for 2000.⁸ The mortality rates were not otherwise race-adjusted.

Using the three categorization methods mortality rates were calculated separately for the three race groups and then compared to statewide results and to a reference population: single race whites. Mortality rates among the minority race groups were not compared because each group might encompass some of the deaths or population estimate of the other groups.

Population estimates and death frequencies are available in detailed tables 1 and 2.

Results

The different race categorization methods produced a higher number of deaths for each of the race groups (Table A and Figure 1). Using the ancestry-adjusted method produced the highest counts of persons assigned to the three race groups.

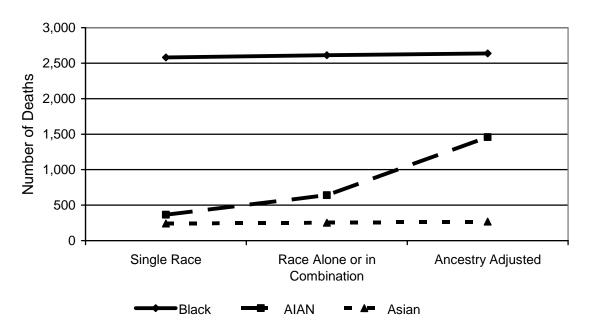


Figure 1. Number of Kansas Resident Deaths by Categorization Method, 2005-2006

The ancestry-adjusted tabulation method resulted in a fourfold increase in the number of deaths to American Indian/Alaska Natives. The increases were more modest for Blacks and Asians, 2.2 percent and 11.6 percent respectively.

Table A. Frequencies and Rates of Resident Deaths by Demographic Characteristics by Race Tabulation Method, Kansas, 2005-2006

Deve	David Talla latina Matha l	Number of	_ ′ i	Age- Adjusted Mortality		nfidence
Race	Race Tabulation Method	Deaths	Rate	Rate	Inte	rval
Black	Single Race Only	2,581	787.8			862.6
	Race Alone or in Combination	2,613	708.3	1,094.7	1,051.1	1,138.2
	Ancestry Adjusted	2,637	714.8	1,104.4	1,060.6	1,148.1
AIAN	Single Race Only	365	670.5	1,121.6	999.4	1,243.9
	Race Alone or in Combination	639	671.4	988.2	908.5	1,068.0
	Ancestry Adjusted	1,459	1,553.0	2,318.4	2,194.9	2,441.9
ASIAN	Single Race Only	241	200.1	407.5	349.1	465.9
	Race Alone or in Combination	252	179.7	383.5	329.9	437.1
	Ancestry Adjusted	269	191.8	408.7	353.4	464.0
All Kansas						
Residents ¹	All Races	49,121	891.6	798.9	791.8	806.1
White 1, 2	Single Race Only	44,888	913.7	773.2	760.0	780.5

¹ Rates based on 100,000 population as used in 2005 and 2006 Annual Summaries of Vital Statistics

Age-adjusted mortality rates for Blacks and American Indian/Alaska Natives had statistically significant changes based on the different race tabulation methods. The change in the mortality rate for Asians was not statistically significant.

Blacks by Tabulation Method

1200
1000
800
600
400
200
White Single Race Race Alone Ancestry or in Adjusted Combination

Figure 2. Age Adjusted Mortality Rates for Blacks by Tabulation Method

² Age unknown for two deaths

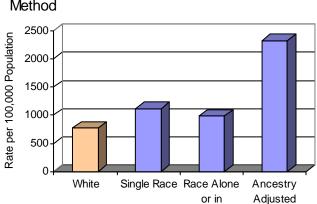


Figure 3. Age Adjusted Mortality Rates for American Indian/Alaska Natives by Tabulation Method

The age-adjusted mortality rate for Blacks had a statistically significant increase over the single race method when the other two categorization methods were used (Figure 2). Using the ancestry-adjusted tabulation method resulted in a 33.2 percent increase in the age-adjusted mortality rate for Blacks compared to the single race method.

Combination

The age-adjusted mortality rate for American Indian/Alaska Natives had no statistically significant change between the single race method and the race alone or in combination method (Figure 3). The American Indian/Alaska Native age-adjusted mortality rate more than doubled (106.7%) using the ancestry-adjusted method compared to the single race only tabulation method. This increase was statistically significant.

Discussion

Age-adjusted mortality rates for two race groups of Kansas residents, Blacks and American Indian/Alaska Natives, increased significantly when using the ancestry-adjusted race categorization method. Mortality rates for the two groups based on single race only, already demonstrate a disparity when compared with the single race only White population. These results may represent the full extent of the mortality experience of the two race groups when compared to the white reference population.

One method for measuring health disparity is to create a ratio of the age-adjusted mortality rate of a minority population to that of a reference population. Health disparity exists when the ratio is greater than one. For this study the single race White population was used as a reference population.

The disparity ratio for Blacks increased from 1.07 using the single race only tabulation method to 1.37 using the race alone or in combination method and to 1.42 when the ancestry-adjusted method is used (Figure 4).

The disparity ratio for American Indian – Alaska Natives increased from 1.45 using the single race tabulation method to 3.00 when the ancestry-adjusted method is used. The ratio dropped to 1.24 when the race alone or in combination method was used.

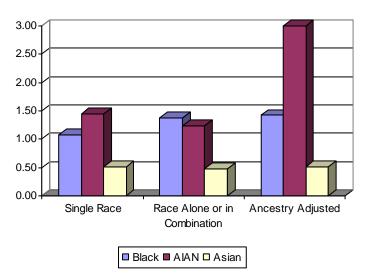


Figure 4. Disparity Ratios by Race Category by Tabulation Method

The ratio for Asians was 0.52 for the race alone and the ancestry-adjusted method. The ratio was 0.48 using the race alone or in combination method.

These findings are subject to at least five limitations. Race and ancestry information on death certificates are not self reported. Funeral directors should ask the family of the decedent for race and ancestry information, but may report their own determination. Family members may also recall the information differently.

Assignment of race on the basis of ancestry information is subject to interpretation bias. While it might be reasonable to assign a person's race to American Indian/Alaska Native on the basis of tribal information contained in the ancestry field, assigning race as Asian based on a country in the Asian subcontinent may not be as reasonable. Conversely, a person whose ancestry was American or from a European country could have been from a minority group and excluded.

Census Bureau population estimates do not have a comparable set of ancestryadjusted population data. The Census Bureau (personal communication, March 26, 2008) does not incorporate ancestry information into base population estimates.

Kansas mortality data are not linked to tribal information. Thus it's impossible to verify the race of everyone who was categorized American Indian – Alaska Native population.

The Kansas mortality data used are residence-based. Race and ancestry information for deaths that occurred in other states may not have been collected by that state in the same manner.

Alternate approaches to categorizing race can identify potential under-reporting and illustrate greater health disparity. Because of the limitations, studies of this type do not obviate the need for the traditional race or population group reporting methods. The population group method, as used in the 2006 Annual Summary of Vital Statistics, presents data in distinct categories of race and Hispanic origin. Besides enabling comparison of rates among groups and over time, the population group method is

designed to avoid excluding persons in mortality rate calculations. This is an important consideration since more persons of Hispanic origin have race listed as "other race".

These findings do not address cause-specific mortality issues. Additional study is needed to assess the impact of different categorization methods on cause-specific mortality rates for different race groups.

References

¹ U.S. Census Bureau, 2000 and 1990 Census.

² Strategic Plan - Building the Infrastructure of the Kansas Center for Health Disparities. Working Draft. 2007. Topeka, KS. Center for Health Disparities, Kansas Department of Health and Environment

³ Final Report - Methodology for Adjusting HIS Mortality Data for Inconsistent Classification of Race-Ethnicity of American Indians and Alaska Natives between State Death Certificates and HIS Patient Registration Records. Indian Health Service. 1996

⁴ Durch JS, Madans JH. Methodological Issues for Vital Rates and Population Estimates: The 1997 OMB Standards for Data on Race and Ethnicity. National Center for Health Statistics. Vital Health Stat 4(31). 2001.

⁵ Annual Summary of Vital Statistics, 2006. Kansas Department of Health and Environment. 2007.

⁶ SAS Institute Inc., Version 9.1.3, Cary, NC: SAS Institute Inc., 2006

⁷ Annual State Population Estimates, SC-EST2006-ALLDATA6, Annual State Population Estimates, SC-EST2006-ALLDATA5, Population Estimates Program, U.S. Census Bureau

⁸ Technical Appendix from Vital Statistics of United States, 1995, Mortality. April 1999. National Center for Health Statistics, Hyattsville, MD.

⁹ Russo CA, Andrews RM, Coffey RM. *Racial and EthnicityDisparities in Potentially Preventable Hospitalizations, 2003.* HCUP Statistical Brief #10. July 2006.Agency for Health Care Research and Quality, Rockville, MD. http://www.hcup-us.ahrq.gov/reports/statbriefs/sb10.pdf.

Detailed Tables and Appendices

Tables

- 1. Population Estimates by Demographic Characteristics (Race Groups), Kansas, 2005-2006
- 2. Resident Deaths by Age-Group by Demographic Characteristics (Race Groups), Kansas, 2005-2006

Appendices

- 1 List of Literal Ancestry Responses used to Re-assign Race Responses
- 2 Reverse Side of VS 231, Kansas Standard Death Certificate

Table 1. Population Estimates by Demographic Characteristics (Race Groups), Kansas, 2005-2006 Estimates by 6 Race Groups (5 Race Alone Groups and One Group with Two or more Race Groups)

	Year	Under 1	1 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85 & over	TOTAL
Black	2005	3,005	11,349	27,788	29,521	23,771	23,366	20,643	11,451	6,802	3,920	1,518	163,134
	2006	2,860	11,434	27,372	29,889	24,141	23,209	21,266	12,023	6,853	3,939	1,521	164,507
AIAN	2005	442	1,629	4,244	5,242	4,186	3,847	3,606	2,158	1,041	508	161	27,064
	2006	417	1,671	4,162	5,326	4,169	3,864	3,664	2,292	1,100	542	167	27,374
Asian	2005	963	3,805	7,741	9,042	13,821	9,761	6,906	4,469	1,990	843	214	59,555
	2006	930	3,860	7,974	8,734	13,822	10,352	7,181	4,743	2,101	925	248	60,870
NHOPI	2005	21	83	320	388	359	299	209	102	54	25	15	1,875
	2006	22	84	295	338	412	282	219	111	59	24	17	1,863
White	2005	33,122	131,352	328,780	361,945	304,299	340,015	362,213	251,567	159,295	122,147	55,641	2,450,376
	2006	33,652	131,641	327,447	361,410	307,186	333,613	366,853	262,542	160,003	120,613	57,272	2,462,232

Source Annual State Population Estimates, SC-EST2006-ALLDATA6 Population Estimates Program, U.S. Census Bureau, May 17, 2007

Estimate	Estimates of Selected Race Groups (5 Race Alone or in Combination Groups)												
		Under 1	1 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85 & over	TOTAL
Black	2005	4,140	15,505	34,844	33,056	25,507	24,414	21,399	11,856	7,019	4,036	1,564	183,340
	2006	3,992	15,699	34,790	33,606	25,951	24,322	22,060	12,456	7,075	4,061	1,570	185,582
AIAN	2005	600	2,223	8,085	9,289	6,785	6,473	6,448	4,072	2,070	1,054	382	47,481
	2006	571	2,278	7,711	9,362	6,794	6,458	6,560	4,292	2,158	1,102	404	47,690
Asian	2005	1,323	5,068	10,517	11,007	15,142	10,651	7,531	4,754	2,154	919	246	69,312
	2006	1,287	5,179	10,789	10,736	15,193	11,297	7,852	5,049	2,272	1,005	283	70,942
NHOPI	2005	37	158	734	765	628	510	362	187	95	50	26	3,552
	2006	38	156	689	715	701	498	385	202	100	52	29	3,565

Source Annual State Population Estimates, SC-EST2006-ALLDATA5 Population Estimates Program, U.S. Census Bureau, May 17, 2007

Table 2. Resident Deaths by Age-Group by Demographic Characteristics (Race Groups), Kansas, 2005-2006

Race	Calculation Method		Age Groups									TOTAL	
		Under		5 -	15 -	25 -	35 -	45 -	55 -	65 -	75 -	85 &	
		1	1 - 4	14	24	34	44	54	64	74	84	over	
Black	Single Race Only	98	19	15	76	94	132	313	373	408	598	455	2581
	Race Alone or in Combination	116	22	16	76	96	133	313	376	409	600	456	2613
	Ancestry-adjusted	117	23	16	77	96	135	315	380	417	603	458	2637
AIAN	Single Race Only	3	1	2	7	8	24	43	57	94	84	42	365
	Race Alone or in Combination	7	1	4	17	16	40	72	98	136	162	86	639
	Ancestry-adjusted	15	4	6	33	34	83	147	202	300	396	239	1459
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Asian	Single Race Only	7	0	0	5	14	14	26	41	51	54	29	241
	Race Alone or in Combination	9	0	0	6	15	14	26	44	53	54	31	252
	Ancestry-adjusted	10	0	0	8	16	14	28	45	58	57	33	269

Source: KDHE-Division of Health-Center for Health and Environmental Statistics

Appendix 1. Reverse Side of VS 231, Kansas Standard Death Certificate, Shaded Areas Analyzed

30.ANCESTRY-What is this person's ancestry or ethnic origin? Italian, German, Dominican, Vietnamese,	32.RACE (Check one or more boxes to indicate what race(s) the decedent considered himself or herself to	33.EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of death.)					
Hmong, French Canadian, etc. (Specify below)	be.) White	□ 8 th grade or less					
	Black or African American	9 th - 12 th grade; no diploma					
31.HISPANIC ORIGIN (Check the box or boxes that best describes whether the decedent is	American Indian or Alaska Native (Name of the enrolled or principal tribes)	High school graduate or GED					
Spanish/Hispanic/Latino. Check the "no" box if the	(Name of the emoled of philosparthoes)	Some College credit, but no degree					
decedent is not Spanish/Hispanic/Latino)		Associate degree (e.g., AA, AS)					
☐ No, not Spanish/Hispanic/Latino		Bachelor's degree (e.g., BA, AB, BS)					
Yes, Mexican/Mexican American/Chicano	Asian Indian	Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)					
Yes, Puerto Rican	Chinese	Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD) Unknown					
Yes, Cuban	Filipino	Unknown					
Yes, Central American	☐ Japanese	34. DECEDENT'S USUAL OCCUPATION (Give kind of work done during most of					
☐ Yes, South American	☐ Korean ☐ Vietnamese	working life. Do not use retired.)					
☐ Yes, other Spanish/Hispanic/Latino (Specify)	Other Asian (Specify)						
	United Asian (Specify)						
Unknown							
Unknown							
	Native Hawaiian	OF WIND OF BUILDING ON INDUCTORY (December 2)					
	Guamanian or Chamorro	35.KIND OF BUSINESS/INDUSTRY (Do not give name of company.)					
	Samoan						
	U Other Pacific Islander (Specify)						
	Other (Specify)						
	Unknown						

Appendix 2. List of Literal Ancestry Responses used to Re-assign Race Responses

MIAMI INDIAN American Indian/Alaska Native THAILAND 1/4 CHEROKEE NAT AM VIATNAMESE **NAT AMER VIETNAMESE** AM IND NAT AMERICAN **Black AM INDIAN NATIVE** AF AMERICAN AMER INDIAN NATIVE AM AMERICAN INDIAN AF-AM NATIVE AMER AMERICAN INDIA AFFRICAN-AMERICAN NATIVE AMERI AMERICAN INDIAH AFICAN AMERICAN NATIVE AMERIC AMERICAN INDIAN AFICAN-AMERICAN NATIVE AMERICAN AMERICAN INDIAN CHEROKEE AFO-AMERICAN NATIVE AMERICAN CHEROKEE AMERICAN INDIANA AFR-AMERICAN NATIVE AMERICAN FLATHEAD AMERICAN INDIAN-CHEROKEE AFRIACN AMERICAN NATIVE AMERICAN INDIAN **AFRIAN** AMERICAN-CHEROKEE NATIVE AMERICAN-CHEROKEE AMERICAN-INDIAN **AFRICA** NATIVE INDIAN AMRICAN INDIAN **AFRICAN OSAGE APACHE** AFRICAN - AMERICAN **OSAGE INDIAN AZTEC** AFRICAN AMERICAN OTOE NATIVE AMERICAN **BLACK FOOT INDIAN** AFRICAN/AMERICAN **PAWNEE BLACKFOOT INDIAN** AFRICAN-AMERICAN **POTAWATOMI BLACKFOOT TRIBE AFRICIAN** POTTAWATOMIE INDIAN **CHACTAW** AFRICIAN AMERICAN POWHATTAN INDIAN CHARKTAW INDIAN AFRICN-AMERICAN PRAIRIE BAND POTAWATOMI INDIAN CHEREKEE INDIAN AFRO AMERICAN PRAIRIE BAND POTAWATOMI NATION **CHEROKEE** AFRO/AMERICAN SAC AND FOX AMERICAN INDIAN CHEROKEE INDIAN AFROAMERICAN SHOSHONE-AM INDIAN CHEROKEE INDIAN 1/16 AFRO-AMERICAN SIOUX CHEROKEE INDIANS AFRO-AMERIICAN SIOUX INDIAN **CHEYENNE INDIAN** AFTO-AMERICA **SOUIX INDIAN** AFTO-AMERICAN CHICKASAW INDIAN **CHIPAWA** Asian AM BLACK AISIAN INDIAN CHOCTAW AMERICAN BLACK **CHOCTAW INDIAN ASIAN ARICAN** CHOCTAW-CHEROKEE **ASIAN AMERICAN** ARICAN AMERICAN **BLACK** CITIZEN POTAWATOMIE **ASIAN INDIAN CREE BLACK AMERICAN** BANGLADESHI **CREEK CHINA BLACK DUTCH CREEK INDIAN** CHINEESE **BLACK IRISH** CREEK NATIVE AMERICAN CHINESE **ETHIOPIAN CROW INDIAN** HINDU BRAHMIN FRO-AMERICAN **DELAWARE HMONG NEGRO DELEWARE INDONESIAN NIGERIAN** DUTCH, CHEROKEE, CHACTAW **KOREAN** SFRICAN AMERICAN HALF CANADIAN MOHAWK LAOS **TUNISIAN** HURON LAOTIAN Native Hawaiian/Other Pacific **ILLINOIS INDIAN** LAOTION Islander IND NEPALI **CHAMORRO INDAIN** OKINAWAN **HAWAIIAN INDIA** PAKASTANIAN HAWIIAN **INDIAN PAKISTAN ISLANDER** INDIAN / AFRICAN AMERICAN **PAKISTANI MARSHALLESE** INDIAN AND WELSH PAKISTANIAN NATIVE HAWAIIAN KATO INDIAN **SOUTH KOREAN** PACIFIC ISLANDE MAYA INDIAN THAI